

## EAST Search History

| Ref # | Hits | Search Query  | DBs   | Default Operator | Plurals | Time Stamp       |
|-------|------|---|---|------------------|---------|------------------|
| S1    | 51   | ((interconnection or wiring or circuit) near (board or substrate) or interposer) near5 (split or gap or divided or partition\$3 or separated or separation or interval) near10 (cte or thermal near expansion or thermally near expand\$4)              | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR               | ON      | 2006/02/22 16:48 |
| S2    | 3325 | ((interconnection or wiring or circuit) near (board or substrate) or interposer) near3 peripheral   | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR               | ON      | 2006/02/22 16:33 |
| S3    | 50   | ((interconnection or wiring or circuit) near (board or substrate) or interposer) near3 peripheral same (cte or thermal\$2 near expan\$4)  | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR               | ON      | 2006/02/22 16:45 |
| S4    | 6    | ((interconnection or wiring or circuit) near (board or substrate) or interposer) near3 peripheral same (thermal\$2 near mismatch\$3)  | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR               | ON      | 2006/02/22 16:46 |
| S6    | 6240 | ((interconnection or wiring or circuit) near (board or substrate)) near2 (split or gap or divided or partition\$3 or separated or separation or interval)   | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR               | ON      | 2006/02/22 16:50 |
| S7    | 237  | ((interconnection or wiring or circuit) near (board or substrate)) near5 (split or gap or divided or partition\$3 or separated or separation or interval) same (chip or die or ic) same (solder near ball or solder near bump or bga or ball near grid) | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR               | ON      | 2006/02/23 14:52 |
| S8    | 152  | (substrate or interposer or pcb or pwb or wiring near board or circuit near board) near5 (trench or trenched or groove or grooved) near8 (thermal\$2 near expan\$4 or cte or thermal\$2 near mismatch\$3)   | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR               | ON      | 2006/02/23 14:48 |
| S9    | 9    | (substrate or interposer or pcb or pwb or wiring near board or circuit near board) near5 (partition\$3) near8 (thermal\$2 near expan\$4 or cte or thermal\$2 near mismatch\$3)  | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR               | ON      | 2006/02/23 14:52 |

## EAST Search History

|     |      |   |   |    |    |                  |
|-----|------|---|---|----|----|------------------|
| S11 | 266  | ((interconnection or wiring or circuit) near (board or substrate)) near4 (groove or grooved or trench or trenched) same (chip or die or ic)   | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2006/02/23 16:14 |
| S12 | 1341 | ((interconnection or wiring or circuit) near (board or substrate)) near6 (ring or annular or annulus or peripheral) same (chip or die or ic)  | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2006/02/23 16:14 |
| S13 | 372  | ((interconnection or wiring or circuit) near (board or substrate)) near6 (ring or annular or annulus) same (chip or die or ic)  | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2006/02/23 16:14 |
| S14 | 1587 | 257/E23.004.ccls.   | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2006/03/07 15:32 |
| S15 | 812  | 257/E23.004.ccls. and (mounting or substrate or pcb or pwb or board or interposer or base or package) near8 (divided or subdivided or partition\$3 or separated or separation or groove or grooved or trench or trenched or nonintegral or piece or peripheral or exterior or stress or strain) | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2006/03/07 15:40 |
| S16 | 680  | 257/E23.004.ccls. and (stress\$4 or strain\$4 or compress\$4 or tensile or tension)   | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2006/03/07 15:40 |
| S17 | 351  | 257/E23.194.ccls.   | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2006/03/08 12:39 |
| S18 | 10   | ("3648131"   "4672415"   "4951099"   "5084750"   "5598036"   "5635762"   "5677564"   "5690270"   "5744974"   "5804771").PN.   | US-PGPUB;<br>USPAT;<br>USOCR                            | OR | ON | 2006/03/08 10:01 |
| S19 | 9    | ("6184570").URPN.   | USPAT   | OR | ON | 2006/03/08 10:02 |
| S20 | 501  | 257/E23.181.ccls.   | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2006/03/08 10:42 |

## EAST Search History

|     |      |   |   |    |    |                  |
|-----|------|---|---|----|----|------------------|
| S21 | 243  | 257/E23.181.ccls. and (stress\$4 or strain\$4 or tensile or tension or compress\$4 or expansion or expanded)  | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2006/03/08 13:41 |
| S22 | 71   | 257/683.ccls.   | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2006/03/08 13:41 |
| S23 | 1311 | 257/704.ccls.   | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2006/03/08 13:41 |
| S24 | 588  | 257/704.ccls. and (stress\$4 or strain\$4 or tensile or tension or compress\$4 or expansion or expanded)  | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2006/03/08 15:20 |
| S25 | 3305 | 257/666-798.ccls. and (substrate or board or pcb or pwb or interposer or package or base) near2 (peripheral or circumferential or periphery)  | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2006/03/08 15:23 |
| S26 | 1014 | 257/666-798.ccls. and (substrate or board or pcb or pwb or interposer) near (peripheral or circumferential or periphery)  | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2006/03/08 15:26 |
| S27 | 47   | 257/666-798.ccls. and (substrate or board or pcb or pwb or interposer) near2 (segmented or segmenting or divided or separated or interval) near15 (stress\$4 or strain\$4 or tensile or tension or compressed or compressive or compression or compress or expanded or expans\$4) | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2006/03/08 15:35 |
| S28 | 1    | 257/666-798.ccls. and (substrate or board or pcb or pwb or interposer) near2 (partition\$4) near15 (stress\$4 or strain\$4 or tensile or tension or compressed or compressive or compression or compress or expanded or expans\$4)  | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2006/03/08 15:47 |
| S29 | 68   | 257/666-798.ccls. and (substrate or board or pcb or pwb or interposer) near2 (partition\$4)   | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2006/03/09 14:49 |

## EAST Search History

|     |     |  |   |    |    |                  |
|-----|-----|--|---|----|----|------------------|
| S30 | 36  | 257/666-798.ccls. and (substrate or board or pcb or pwb or interposer) near8 (peripheral or periphery or circumferential) near8 (central) same (stress\$4 or strain\$4 or tensile or tension or compressed or compressive or compression or compress or expanded or expans\$4)               | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2006/03/08 15:52 |
| S31 | 51  | 257/666-798.ccls. and (substrate or board or pcb or pwb or interposer) near2 (ring) same (stress\$4 or strain\$4 or tensile or tension or compressed or compressive or compression or compress or expanded or expans\$4)   | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2006/03/09 14:50 |
| S32 | 53  | (heat near sink or cover or lid) near4 (pwb or pcb or wiring near board or wiring near substrate or circuit near board) near4 (solder near ball or ball near grid or bga)  | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2006/03/08 16:01 |
| S33 | 6   | (heat near sink or cover or lid) near10 (pwb or pcb or wiring near board or wiring near substrate or circuit near board) near8 (chip or die) and (interposer or stiffener or spacer) near4 (surrounding or around or about or circumscribing or periphery or peripheral) near4 (chip or die) | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2006/03/08 16:08 |
| S34 | 210 | 257/704.ccor.  | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2006/03/08 16:27 |
| S35 | 271 | (chip or die) near5 (cap or lid or cover) same (cap or lid or cover) near2 (interconnect\$4 or trace or signal)  | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2006/03/08 16:32 |
| S36 | 130 | (chip or die) near5 (cap or lid or cover) same (cap or lid or cover) near2 (wiring)  | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2006/03/08 16:33 |

## EAST Search History

|     |     |   |   |    |    |                  |
|-----|-----|---|---|----|----|------------------|
| S37 | 14  | (US-20020086515-\$ or<br>US-20050078434-\$ or<br>US-20030071353-\$ or<br>US-20040164401-\$ or<br>US-20040150097-\$ or<br>US-20030178719-\$ or<br>US-20010040288-\$).did. or<br>(US-6710457-\$ or US-6653219-\$ or<br>US-6184570-\$ or US-6621161-\$ or<br>US-6720647-\$ or US-6538319-\$).did.<br>or (JP-2000100866-\$).did.                        | US-PGPUB;<br>USPAT;<br>JPO                              | OR | ON | 2006/03/08 16:35 |
| S38 | 16  | 257/666-798.ccls. and (substrate or<br>board or pcb or pwb or interposer)<br>near2 (subdivided or subdivision)  | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2006/03/09 14:42 |
| S39 | 310 | 257/666-798.ccls. and (substrate or<br>board or pcb or pwb or interposer)<br>near2 (slot or slotted)  | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2006/03/09 14:49 |
| S40 | 33  | 257/666-798.ccls. and (substrate or<br>board or pcb or pwb or interposer)<br>near2 (slot or slotted) same (stress\$4<br>or strain\$4 or tensile or tension or<br>compressed or compressive or<br>compression or compress or expanded<br>or expans\$4)   | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2006/03/09 14:59 |
| S41 | 283 | 257/666-798.ccls. and (cavity adj<br>down)  | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2006/03/09 14:59 |
| S42 | 5   | ("5397921"   "5409865"   "5646828"  <br>"6163458"   "6287893").PN.  | US-PGPUB;<br>USPAT;<br>USOCR                            | OR | ON | 2006/03/09 15:41 |
| S43 | 26  | ("5369274"   "5440123"   "5583377"  <br>"5583378"   "5620928"   "5696666"  <br>"5747803"   "5768774"   "5943212"  <br>"5977543"   "5986340"   "5998241"  <br>"5999415"   "6020637"   "6034427"  <br>"6066512"   "6103550"   "6114760"  <br>"6175497"   "6184580"   "6242279"  <br>"6258631"   "6323065"   "6373131"  <br>"6395582"   "6403401").PN. | US-PGPUB;<br>USPAT;<br>USOCR                            | OR | ON | 2006/03/09 15:47 |

## EAST Search History

|     |    |  |   |    |    |                  |
|-----|----|--|---|----|----|------------------|
| S44 | 18 | ("5240588"   "5397921"   "5420460"   "5455456"   "5583378"   "5633533"   "5640047"   "5663530"   "5710459"   "5739581"   "5832596"   "5844168"   "5972736"   "5976916"   "5998241"   "6066512"   "6248612"   "6258631").<br>PN.  | US-PGPUB;<br>USPAT;<br>USOCR                                      | OR | ON | 2006/03/09 15:47 |
| S45 | 63 | ("6020637").URPN.  | USPAT   | OR | ON | 2006/03/09 16:46 |
| S46 | 82 | interposer near3 (ring or peripheral or surrounding or around or enclosing or ringing or (chip or die) near2 (cavity or aperture or opening)) and (heat or thermal) near (sink or sinking or spreader or spreading) and (bga or ball near grid or solder near ball or solder near bump)  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2006/03/09 16:49 |
| S47 | 20 | (US-20050078434-\$ or<br>US-20010040288-\$ or<br>US-20040150097-\$ or<br>US-20020086515-\$ or<br>US-20040164401-\$ or<br>US-20030178719-\$ or<br>US-20030071353-\$ or<br>US-20050035452-\$ or<br>US-20030174478-\$ or<br>US-20030146508-\$ or<br>US-20030080423-\$ or<br>US-20020050407-\$).did. or<br>(US-6621161-\$ or US-6184570-\$ or<br>US-6710457-\$ or US-6653219-\$ or<br>US-6720647-\$ or US-6538319-\$ or<br>US-6650015-\$).did. or<br>(JP-2000100866-\$).did. | US-PGPUB;<br>USPAT;<br>JPO  | OR | ON | 2006/03/09 17:21 |